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The Corps Environment

The implosion of this housing complex at Fort Myer exceeds the Army goals for waste diversion and recycling.

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Inside this issue:

The Corps imploded Tencza Terrace, a 40-year old complex at Fort Myer, Va., June 4. Read more on pages 8-9.
(Cover photo by Debra Valine)

New tools discussed at environmental conference

By Andrea Takash
Huntsville Center

New tools for environmental management, cultural resources management, sustainability and military munitions projects topped the topics discussed at the annual Joint Services Environmental Management Conference (JSEM).

James Connaughton, chairman, White House Council on Environmental Quality, talked about the overall area of progress with an integrated environmental management system.

"DoD is way ahead in collaborating on environmental stewardship projects," Connaughton said. "Managing change is stewardship."

"DoD is way ahead in collaborating on environmental stewardship projects," James Connaughton said.

Tad Davis, Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health, also discussed environmental management. He presented the Army's strategy for the environment.

"This strategy requires the Army to systematically think and act based on a triple bottom line: mission, environment and communities," Davis said. "We must sustain the mission and secure the future."

However, there will be challenges to implementing sustainable processes, Davis said.

"The challenge for sustainability is that there is no separate budget," he said.

The Army is developing a strategic environmental management plan. Davis expects a draft by the middle to late summer and to launch the campaign in the fall.

Many people from across the Corps spoke throughout the conference.

Jerry Hodgson, Omaha District's Military Munitions Response Program Design Center manager, spoke about the former Lowry Bombing and Gunnery Range, 20 miles southeast of Denver.

"We have been working at this 59,000-acre-site for the past eight years," Hodgson said. "During that time, we performed historical research and a wide area assessment to determine only those areas known to have munitions containments.

"We were able to clean up 42,000 acres. Out of the total 59,000 acres, 53,000 acres are 'presumptively' clean," Hodgson said.

The subject of munitions response was covered from a variety of angles. Betina Johnson, Chemical Warfare Materiel Scoping and Security Study project manager at Huntsville Engineering and Support Center, focused on the application of the Chemical Hazard Evaluation Module portion of the Munitions Response Site Prioritization Protocol. "The Corps conducted a nationwide effort at Formerly Used Defense Sites where historical documentation indicated that chemical warfare materiel had been used, produced, stored and/or tested," Johnson said.

"We developed several lessons learned from the studies," she said. "By using the Chemical Hazard Evaluation Module, the team was able to develop a priority for each site, as well as gather information for assistance with future site sequencing. We also saved money by developing general public involvement materials that could be utilized at any suspect site."

The benefits of outreach and partnering was another common theme.

Bob Lubbert, Headquarters U.S. Army Corps of Engineers' Environmental Support Team, addressed partnering with Native Americans through the Native American Lands Environmental Mitigation Program, also called NALEMP.

NALEMP projects address environmental impacts on Indian lands that resulted from DoD activities, Lubbert said.

"The program benefits both the tribes and Corps," he said. "Through our outreach we have developed relationships with the tribes."

Next year's JSEM conference will take place May 21-24 in Columbus, Ohio.

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Lt. Gen. Carl A. Strock
Chief of Engineers
Publisher
Suzanne Fournier
Chief of Public Affairs
Stacey Hirata
Executive Editor
Candice Walters
Managing Editor
Andrea Takash
Editor

Submissions

The Corps Environment welcomes submissions. Please send your articles, photos, events, letters or questions via e-mail to: andrea.m.takash2@usace.army.mil

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Buffalo District cleans up Rattlesnake Creek

By Joan Morrissey
Buffalo District

The Rattlesnake Creek Project is the third component of a large, national environmental cleanup project being conducted by Buffalo District under the Formerly Utilized Sites Remedial Action Program (FUSRAP).

Under FUSRAP, the Corps identifies, investigates and takes appropriate cleanup action at sites with radioactive contamination resulting from the nation's early atomic weapons and energy development programs.

The Rattlesnake Creek Project makes up a portion of one of the largest environmental cleanups in western New York. A total of 33,200 tons of contaminated soils were removed from the creek at a cost of $17 million, completing the Corps' work on the $95 million Ashland cleanup.

The Rattlesnake Creek Cleanup project added 6.2 acres of "cleaned property" to the already remediated 14 acres of Ashland sites — thereby releasing this privately held property for future development.

It resulted in the cleanup of approximately one mile of radioactively contaminated creek bed, which crossed 12 separate properties.

As part of the Corps FUSRAP Program, Buffalo District removed radioactively contaminated soils from Rattlesnake Creek. *(Photo by Dennis Rimer, Buffalo District)*

Great Lakes wetlands and habitat proposal selected by Corps of Engineers for $1 million funding

John Paul Woodley, Jr., Assistant Secretary of the Army for Civil Works, announced on May 1 that the U.S. Army Corps of Engineers' Buffalo, Detroit and Chicago Districts will receive $1 million to further the efforts of the Great Lakes Regional Collaboration for the protection and restoration of wetlands and coastal habitat.

The Great Lakes project was the largest of five selected by Woodley from numerous proposals for the $4.5 million of funding available for analyses of complex water resources issues within large, multi-jurisdictional watersheds.

The Corps' proposal received letters of support from key regional stakeholders, including Ducks Unlimited, The Nature Conservancy, Great Lakes Fishery Commission, Great Lakes — St. Lawrence Cities Initiative, the Great Lakes Commission and the co-chairs of the Collaboration Habitat Team.

The Great Lakes Regional Collaboration is a partnership of federal, state, tribal and municipal governments that was created in December 2004 in response to Executive Order 13340 signed by President Bush in May 2004.

The Executive Order designated the resource issues of the Great Lakes as nationally significant and defined a federal policy to support local and regional efforts to restore and protect the Great Lakes ecosystem through the establishment of regional collaboration.

More than 1,500 people participated in the collaboration.

Albuquerque District improves Kirtland Air Force Base's water supply

By Torrie McAllister, *South Pacific Division, and*
Bruce Hill, *Albuquerque District*

Arsenic — once infamously known as the poison of kings and the king of poisons — conjures visions of murder and mystery. It's a chemical element that occurs naturally in soil and enters water from wind-blown dust and from runoff and leaching. No one wants it in their drinking water, including Air Force families at Kirtland Air Force Base, N.M.

One member of New Mexico's Congressional Delegation recognizes a statewide need to reduce arsenic levels and may use the arsenic treatment facility at Kirtland Air Force Base as a potential model for future systems.

"My purpose in visiting the arsenic treatment site at Kirtland is to see how the latest technology will allow the base to meet the strict new standard," said Sen. Pete V. Domenici, N.M. "I look forward to seeing the blending method at work firsthand."

In 1996, Congress directed the Environmental Protection Agency to create new drinking water standards for arsenic. In January 2001, the agency adopted a new 10 parts per billion (ppb) standard and set Jan. 23, 2006, as the deadline for water systems to comply with the new standard. The Air Force Materiel Command moved swiftly to comply with the new standard, which is well below the World Health Organization's and prior United States' standard of 50 ppb.

The groundwater at Kirtland Air Force Base contains trace amounts of arsenic, like thousands of municipal water systems across the country. The levels have always been well below the previous EPA drinking water standard of 50 ppb for arsenic, and Kirtland officials have placed a high priority on staying in compliance.

Reducing arsenic from 50 to 10 ppb will prevent approximately 19-31 cases of bladder cancer and five to eight deaths due to bladder cancer per year, according to EPA literature. The change is also expected to prevent approximately 19-25 cases of lung cancer and 16-22 deaths due to lung cancer.

"The change in the maximum limits is a huge reduction in the levels of arsenic that people were drinking," said Raul Moreno, the Corps' project manager who managed the modifications to the base's drinking water system.

"The base's groundwater production wells drew more than 1.2 billion gallons of water annually," said Pat Montano, Kirtland Air Force Base Water Quality program manager. "Average daily production is 3.5 million from seven groundwater wells." Arsenic levels in five of the seven wells range from 1.0 to 4.0 ppb with the remaining two wells ranging from 10 ppb to 16 ppb and 12.8 ppb to 24 ppb respectively.

Kirtland Air Force Base partnered with Albuquerque District on a $6.96 million project to decrease arsenic levels in the base's drinking water. *(Photo by Chris Velasquez, Albuquerque District)*

The best way to reduce the arsenic, according to a study by environmental contractor CH2MHill, was to combine the water from the seven wells into a 2 million gallon "blending" tank to dilute the arsenic at the point where water enters the distribution system, and create the ideal drinking water. The Air Force asked the Corps to manage the construction.

Engineering the perfect blend was challenging, Moreno said. The antiquated water infrastructure included a labyrinth of piping to the various wells that crisscrossed the 51,000-acre base.

"By pumping all the water to the central blending tank, we were able to create much needed redundancy so if a well or pipeline is down, the water supply may continue uninterrupted to everyone on base," Moreno said.

"We added new pipe and modernized the distribution system by adding new computer-based controls and radio switches that turn on specific pumps at set times based on a 'recipe' that mixes the water to ensure the maximum arsenic limit is not reached," he said.

Construction of the project occurred mostly underground with nearly 22,000 linear feet of new pipe installed and hundreds of feet of old pipe rerouted. The only significant above-ground construction was the 2 million gallon mixing tank, new pump station and chlorinization building.

"The people who live and work on Kirtland are better off today than a year ago thanks to the new system," Moreno said.

Crims Island restoration project progresses

By Jennifer Sowell
Portland District

Phase one of the Crims Island project creates tidal channels that will encourage native habitat and provide access to juvenile salmonids. *(Photos by Jennifer Sowell)*

The U.S. Army Corps of Engineers plays a vital role in the protection and stewardship of environmental resources, as well as the restoration and enhancement of ecosystems, such as the Lower Columbia River estuary.

The estuary has been affected for the past 100 years by many factors, including the implementation of navigation improvements, agricultural and forestry practices, and urban and industrial development. The collective effect of these and other factors has contributed to the degradation of the quality and quantity of wetlands habitat in the Lower Columbia River estuary and floodplain.

An example of this can be found on Crims Island, which is located 48 miles downriver from Portland, Ore. This once fertile wetland was initially altered by agricultural practices and became choked with invasive reed canary grass.

The Corps saw an opportunity to re-establish this land's natural habitat. Through planning, construction and a forthcoming large-scale replanting effort, the island's tidal channel, marsh and riparian habitats are being restored.

The three-year, $3.7 million project was made possible due to many agencies working together, including the U.S. Fish and Wildlife Service, Bonneville Power Administration, American Rivers and Columbia Land Trust.

The restoration will provide habitat for a variety of fish and wildlife species.

"The project will restore 94 acres of tidal marsh and channels, along with 115 acres of forest," said Doug Putman, the Corps' project manager for the effort.

Crims Island is the first in a series of habitat restoration projects for the Lower Columbia River. This will benefit the Columbian white-tailed deer, as well as many species of fish and wildlife listed on the Endangered Species Act.

"If we want future generations to enjoy abundant wild salmon and steelhead runs in the Columbia River, we must focus on restoring habitat," said David Moryc, with the outreach office of American Rivers. "This collaborative effort is an excellent model."

The Crims Island restoration project has two major phases, the first of which is to restore tidal channel and marsh habitat. To begin, the Corps excavated two feet of soil from the island's interior marsh habitat to attain the proper elevation necessary for establishing native wetland plant communities.

The excavated soil was disposed of on nearby lands that were once used for grazing. This and other upland portions of the island will eventually be restored to riparian forest habitat during phase two of the project.

With the excavation completed, 32 acres of shallow tidal channels were created throughout the 94-acre marshland. The restored channels will improve tidal circulation, allowing greater access into and out of the habitat for juvenile salmonids.

When both phases are complete, the tidal marsh restoration will provide juvenile rearing and foraging habitat for fall Chinook, chum and coho salmon. Other salmonids, including the Snake River sockeye, steelhead and coastal cutthroat trout, will benefit from restored linkages in the Columbia River's estuarine food web.

"We have never tried anything of this size and scope before, so the information we gain at Crims Island will influence the design of future restoration projects on other refuge islands," said Charles Stenvall of the U.S. Fish and Wildlife Service.

Norfolk District brings down observation tower

By Patrick Bloodgood
Norfolk District

The sound of creaking and twisting steel becomes a loud thud as a World War II observation tower is yanked to the ground by contractors working for the U.S. Army Corps of Engineers' Norfolk District on Plum Tree Island in Poquoson, Va.

The tower was the last of three to still be upright and over time had become a mere shadow of its past. In its heyday, the tower stood on a former Army Air Corps bombing range that has since been converted into a wildlife refuge and is managed by the U.S. Fish and Wildlife Service.

On March 14, contractors, using funding from the Formerly Used Defense Sites program, cut into the supports holding the tower upright effectively weakening it. Once the tower came to rest on its side, the contractors once again fired up their blow torches and began to cut the structure into smaller pieces to be transported off the island.

The three towers were used as observation and control points for practice bombing runs by Army Air Corps pilots. Over time, it was left to endure harsh weather and human visitors, who would climb the structure overlooking the refuge. The tower was determined to be a safety hazard, attracting people onto the property where live munitions may still be present.

Spray paint graffiti and missing tower steps indicated that people were placing themselves in danger from suspected live ordnance and disregarding more than 200 no-trespassing signs on Plum Tree Island, which was designated in 2004 as a federal danger zone. The ground surrounding the tower is littered with suspected ordnance both on the surface and subsurface.

Despite the obvious safety concerns, the citizens of Poquoson did not support the removal of the tower. Many people and watermen used the tower as a navigation point. Others viewed the tower as a historic monument that should stay as a historical reminder of Poquoson and the island.

George Follett, Baltimore District's safety and occupational health specialist, conducts a munitions sweep of the site area.

Corps contractors begin weakening the tower's support by using blow torches to cut into the rusting steel legs. *(Photos by Patrick Bloodgood)*

"In order to be good stewards, we are offering the Poquoson Museum as much as we can in regards to materials: photographs, portions of the tower, as well as documents," said Adrienne James, project manager.

"Now with the tower down, the attraction to test fate by accessing the bomb-riddled refuge and climbing the rickety steel structure is no longer there," said Cyrus Brame of the U.S. Fish and Wildlife Service.

To clear the way for the building demolition and debris removal operation, Baltimore District's Explosive Ordnance Disposal specialists ensured that the area surrounding the towers was free of munitions.

After the contractors pulled the tower down, Norfolk District's site manager Marc Gutterman said he felt bittersweet about the removal.

"It's a little sad watching a piece of history come down along this historic waterway; it just had to be done because the risk to the public was just too great," Gutterman said.

In addition to plans to donate portions of the tower to the Poquoson Museum, an interpretive display with photos and a brief history of the tower and the island is also planned. The interpretive display will be placed on the banks of the Poquoson River, overlooking the site where the tower once stood.

Sneed named Water Conservationist of the Year

By Dave Treadway
Nashville District

Bob Sneed, chief of Nashville District's Water Management Section, was named 2005 Water Conservationist of the Year by the Tennessee Wildlife Federation.

The award honors an individual or organization for "outstanding achievement in pollution control, conservation and protection of wetlands, estuaries and wild or natural rivers, prevention of water degradation quality through effective planning and management or other activity aimed at maintaining or improving water standards."

Bob Sneed is interviewed at Center Hill Dam by Peter White, WKRN TV2 newsman. *(Photo by Dave Treadway)*

Tennessee Wildlife Federation spokesperson Don King cited Sneed for his lead role in designing and implementing an innovative scheme of blending power generation waters with sluice gate releases to greatly improve dissolved oxygen levels in the Center Hill Dam tailwaters of the Caney Fork River.

"Since the 1980s, the Tennessee Wildlife Resources Agency has worked with the U.S. Army Corps of Engineers to restore the water quality in the Caney Fork River downstream of Center Hill Dam," King said.

"From August to October of each year, oxygen is depleted in the water that is released during power generation and that has severely damaged the trout fishery. In the fall of 2005, for the first time in more than half a century, the oxygen content of the Caney Fork River supported keeping the trout fishery intact into the cold weather months. As a result, the Caney Fork may begin to produce world class fish comparable to those found in the rough hollows of other famous trout rivers," King said.

"It's very gratifying to be recognized in this manner, but I don't look at this as an individual recognition," Sneed said. "It was the result of a team effort. It started with a renewed environmental awareness fostered by the Chief of Engineers and his establishment of the Environmental Operating Principles.

"This attitude has filtered throughout our organization and now includes our partners from the power, environmental and recreation arenas who all play an important role. Certainly, the sluicing effort would not have been successful without the dedicated support provided by the staff at Center Hill, " he said.

Mobile District unveils *Pollution Fear Factor*

By Marilyn Phipps
Mobile District

April Fools' Day is normally spent playing tricks on friends; however, several members of Mobile District's Planning and Environmental Division team spent the day testing their game, *Pollution Fear Factor*, at the Dauphin Island Discovery Day sponsored by the Mobile Bay National Estuary Program.

The team developed the game based on the television show *Fear Factor* to teach children about pollution. Participants rolled a large die with different types of pollution on each side, and a pollution "cocktail" was made based on what they rolled. The options were motor oil (chocolate syrup), toxic slime (mint jelly), road grit (crushed Oreo cookies), sewage (crunchy peanut butter) or pesticides (Sprite). If they drank the mixture, they won a prize.

After rolling pesticide, pesticide and road grit, Sonya Rodgers, Mobile District contracting officer, said, "This is fun and not a bad drink."

Participants roll the die in *Pollution Fear Factor.* *(Photo by Sheri Zettle, Mobile District)*

The team members took turns asking the players questions about the different types of pollution, where it comes from and why it is bad. The team also promoted water safety and answered questions about the Corps.

Huntsville Center successfully im

By Debra Valine, *Huntsville Center, and* Matt McFarland, *Fort Myer's Pentagram*

At 6:25 a.m. June 4, Bldg. 501 stood 12 stories tall against the backdrop of the morning sun. With a series of loud booms at 6:30, the 40-year-old housing complex came crumbling down.

It took engineers from the U.S. Army Corps of Engineers and contractor partners 124 pounds of explosives and 15 seconds to bring the building down. All that remains to do is to crush the remaining rubble into small pieces and use it as landfill to raise the elevation of the parking lots on the west side of the site and to become an extension of the Hatfield Gate entrance of Fort Myer.

Fort Myer worked with the Engineering and Support Center in Huntsville, Ala., the Corps of Engineers Baltimore District, Bhate Associates of Birmingham, Ala., and Controlled Demolitions Inc., of Phoenix, Md., on the project.

"This demolition effort is an excellent example of the Fort Myer Military Community's outstanding partnership with the Army Corps of Engineers," said Garrison Commander Col. Thomas A. Allmon. "The project is a true environmental success story for our Army, and the open communication with our partners is the key to that success."

Bldg. 501 was a 150,449 gross square foot, 12-story family housing facility built in 1966 for junior noncommissioned officers. *(File photo)*

The Corps is recycling or reusing nearly 90 percent of the materials from Bldg. 501, which exceeds Army goals for waste diversion and recycling. *(Photo by Debra Valine)*

Imploding the building versus traditional demolition saved both time and money and is a much safer operation. The team will divert (reuse or recycle) nearly 90 percent of the building material from the landfill, which exceeds the 2004 Army regulation that requires 50 percent diversion of materials.

The project builds upon the sustainability concept as espoused in both the Environmental Operating Principles and the Army Strategy for the Environment — Sustain the Mission, Secure the Environment.

"This is big. This is probably the best one we've ever been able to do because we're going to be able to crush the main building," said Bhate Associates Project Manager Greg Taylor. Bhate Associates is the firm contracted

plodes building on Fort Myer

It took engineers from the Corps and contractor partners 125 pounds of explosives and 15 seconds to bring Bldg. 501 down. *(Photo by Debra Valine)*

for the $1.6 million demolition of the apartment complex.

When Huntsville Center wrote the scope of work for the project, it included the requirement to recycle — or divert — as much of the building as possible. Recycling can save money by cutting down on the cost of transporting materials to a landfill and paying to dump the materials in the landfill.

"These particular firms — Bhate and CDI — are really committed to recycling," said Michael Norton, the project manager with the Huntsville Center. "The recycling effort was a success because of these contractors. A lot of demolition projects just bring in backhoes, or a claw, tear it down and dump it in a landfill."

Bhate Associates began their on-site work the first week of February. "When we got here we wanted to try to salvage everything we could and recycle the material," Taylor said. Items recycled included dishwashers, stoves and refrigerators that went to Fort Belvoir, Va., in exchange for new housing for E1s through E5s from Bldg. 501. The playground equipment outside the building also was sent to Fort Belvoir.

The team offered items to Habitat for Humanity and the Jimmy Carter Foundation. Taylor estimates that 95 percent of the copper wires, 95 percent of the steel piping and 80 percent of the metal studs and screws are being recycled. Even the light posts in the parking lot are being recycled as aluminum.

A whopping 60,000 pounds of sheet rock are being recycled. The sheet rock is ground up and used as a fertilizer. Tom Peck, a project manager with Bhate Associates, said he took the idea from a demolition guide developed for Fort Campbell, Ky.

As many trees as possible are being saved.

"I love trees and I know how hard it is to grow one," Taylor said. Ninety percent of the trees that can't be saved will be recycled into mulch. The rest will be given as firewood to needy families.

Bldg. 501, named for Col. Anthony J. Tencza, housed enlisted Soldiers and their families from 1966 until 2005.

The installation plans to build new roads, supporting utilities, storm sewers and a possible visitor control center on the revamped site.

Gay van Brero, Fort Myer's housing manager, who had been working on removing the building since 1997, said all she could think of as the building came down was how many families had lived there over the years.

"If you consider that 120 families that have lived in the building for the past 40 years, and that those families rotated every three years, and multiply that number of families by 13 changes of occupancy in each apartment with the Army average for a Soldier's family of 2.5, that's a lot of families that have lived in Tencza Terrace," van Brero said.

Gary Williams, Baltimore District, and Buddy Billington, Fort Myer's resident engineer, provided on-site expertise and oversight during the project. *(Photo by Debra Valine)*

Tough year ahead for Silvery Minnow

By Mitch Frazier
South Pacific Division

Less than 12 months after agencies logged one of the most successful Silvery Minnow rescue efforts on New Mexico's Rio Grande, officials in the state are gearing up for what could be one of the toughest years yet in the battle to protect the species.

Arid conditions in the state and limited projected snowmelt runoff from the Rio Grande Basin have officials concerned many of the minnows rescued in 2005 will be lost when the river dries in the summer sun.

"The river (Rio Grande) is predicted to begin drying in March this year after the spring runoff slows and irrigation demands rise," said April Sanders, the Army Corps of Engineers project manager for Upper Rio Grande Water Operation Program. "This year the flows are some of the worst on record, and with the mountain snowpack the lowest depth in recorded history, we could find ourselves in rescue operations soon."

As the shallow meandering river dries, it will shrink into small isolated pools trapping the endangered Silvery Minnow. Once trapped, the fish become easy prey for predators and are subjected to intense heat and reduced oxygen levels in the small shallow pools, said Brett Thompson, the Corps' fisheries biologist in Albuquerque.

"We are already planning to have teams of employees, contractors and volunteers out in the river to collect the fish and transport them to other reaches of the river that have perennial flow," Thompson said. "I'll be out there all summer."

Rescue efforts are nothing new for Thompson who is helping the U.S. Fish and Wildlife Service, as well as other agencies like the U.S. Bureau of Reclamation, in rescuing minnows.

Employees and volunteers net Silvery Minnows along the Rio Grande. The effort began last year and is part of a multi-agency effort to protect the species. *(Photo by Frank Martin, Albuquerque District)*

After high-mountain run-off totals last year slowed to a trickle in the arid summer sun, Thompson and teams of rescuers waded through the river's isolated puddles collecting the fish and transporting them in warm oxygenated water to other reaches of the river.

Thanks to the rescue efforts and a near perfect spawning season last year, millions of the fish survived. Now government officials have to figure out where this new large fish population will live when the water evaporates later this year.

More than 20 local, state and federal government agencies and civic groups have teamed up to find a way to save the endangered fish. The Middle Rio Grande Endangered Species Act Collaborative Program "is taking a holistic look at the basin to find ways to maximize the health of the environment while meeting the needs of the basin," Sanders said.

"We're finalizing the draft long-term management plan now that will focus on ways to recover the species," said Sanders, a 15-year veteran of engineering work along the river.

Once one of the most abundant and widespread fishes in the Rio Grande Basin, the Silvery Minnow now only survives in a 170-mile stretch of the Rio Grande in New Mexico. Decades of dam building and infrastructure additions along the river decreased the connectivity of slow moving warm water the fish need for reproduction.

The interruption thwarted the fishes' reproductive cycle and plummeting population totals prompted the U.S. Fish and Wildlife Service to list the Silvery Minnow as an endangered species in 1994.

Introduction of exotic bass species and channel catfish into the river have

See Silvery Minnow page 16

Army engineers demonstrate contingency capabilities

By Joe Campbell
Far East District

Nearly 100 Soldiers and Civilians from throughout the U.S. Army Corps of Engineers took part in this year's Reception, Staging and Onward Integration (RSOI) exercise held across the Korean peninsula.

The participants demonstrated the Far East District's and Corps' contingency engineering capabilities. Team members served as liaison officers with major U.S. Forces Korea commands and the Republic of Korea Field Armistice. They conducted field engineering assessments using two established Forward Engineering Support Teams (FEST) and responded to multiple requests for information using in-house and stateside reach-back engineering expertise.

"The Far East District received and responded to more than 30 requests for information from Combined Forces Command and U.S. Forces Korea supported units," said Lt. Col. John F. Loefstedt, Far East District deputy commander.

Eight of the nine worldwide Corps divisions sent personnel to participate in the RSOI exercise. It is one of the largest annual training exercises in Korea.

"It was definitely rewarding to see that we can actually pull together multiple agencies and make this exercise happen, especially in a foreign country where there are sometimes language barriers," said Marsha Schreiber, an operations specialist from Alaska District. "It really proves that we are a learning organization."

The Environmental Support Team also participated.

"This was the first opportunity for the Environmental Support Team (EnvST) to participate in this exercise," said Mary Johansen, Environmental Support Team program manager for the Environmental Compliance and Management Branch at the Hazardous, Toxic and Radioactive Waste Center of Expertise. "Bill Graney, Seattle District, and I were able to identify valuable work items for EnvST to complete for U.S. Forces Korea during follow-on exercises. The work includes completion of Environmental Baseline Surveys on a number of properties."

Throughout the exercise the strength of the Republic of Korea - U.S. Alliance was seen through the mobilization of the host nation support assets that would execute required contingency construction projects.

"Damaged roads and railways were quickly restored to operational condition to support onward movement of combined Republic of Korea and U.S. forces," said Lenny Kim, a Far East District team leader. "The Republic of Korea Army was very effective in the execution of contingency operations. I was impressed with their ability and willingness to work together."

"This exercise was an experience of a lifetime," said Debbie Fletcher, an operations specialist assigned to the Alaska District.

William McDaniel, a Far East District information management technician, removes camouflage netting from around the Emergency Operations Center.
(Photo by Joe Campbell)

Sharing equipment regionally saves millions

By Ed Voigt
Philadelphia District

The statement "Why rent, when you can own?" has never been truer than in the Superfund remediation business, where often millions of dollars can be saved during the life of a project through a little communication, coordination and regionalization.

In Philadelphia District, project engineers have realized cost savings by sharing large pieces of government-owned equipment, such as excavators and trommels, among different projects within the district or across other districts and regions.

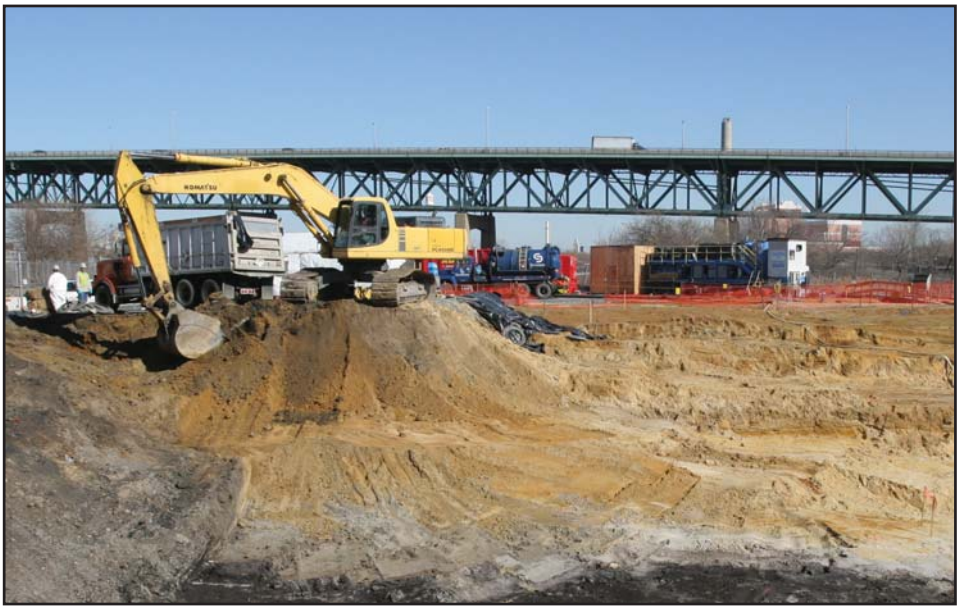
"When the federal government pays only for periodic maintenance and for movement of equipment back and forth between projects, that can be much cheaper than renting equipment," said Thomas Gibison, project manager.

The project manager's decision whether to rent or buy is based on a standardized process.

"The Corps and the contractor perform a rent/buy analysis for each piece of equipment. If it is more cost effective to buy a piece of equipment rather than rent or lease, the government authorizes the contractor to buy the equipment.

"For example, a pressure washer may cost $500 to buy and $100 per month to rent. If the pressure washer will be used for at least a year, it makes sense for the government to buy the piece of equipment, even after considering maintenance, repairs and other costs," Gibison said.

Among its several Superfund projects in New Jersey, Philadelphia District has two large ongoing remediations that show the benefits and potential savings of sharing government-owned equipment: Vineland Chemical Company site in Vineland, and Welsbach and General Gas Mantle sites in Camden and Gloucester City.



Philadelphia District makes taxpayer dollars go farther by sharing government-owned equipment, such as this excavator (foreground) and modular water treatment plant (right), currently in use at the Welsbach and General Gas Mantle Superfund Site Remediation. *(Photo by Anthony Bley, Philadelphia District)*

Throughout the remediation, the Welsbach site has recycled several pieces of government-owned equipment from other Superfund sites. The estimated savings at Welsbach from reusing government-owned equipment is $2.1 million.

"Two pieces alone, a Komatsu PC-400 excavator and a 300,000 gallon Modu-tank, stand to save the Welsbach project almost $1 million," Gibison said.

Vineland Chemical has benefited from the use of several pieces of government-owned equipment, such as Moxy dump trucks, that have resulted in an estimated savings of $3.3 million.

"With savings of this magnitude, rent-versus-buy cost analyses are imperative; project managers must communicate with each other to coordinate equipment sharing," said Eric Charlier, project manager.

"A certain project will own a piece of equipment. This piece of equipment is shared with other projects at times it is not needed. Project managers work together to determine whether or not it is cost effective to ship the equipment to another site to keep it utilized," Gibison said.

When equipment is determined to be excess or no longer required for the mission or project, every effort is made to offer the equipment to other Superfund sites.

"Sharing excess equipment that would normally be turned into the Defense Reutilization and Marketing Office for sale to the public saves the government money because new equipment does not need to be purchased for each project. The DRMO process is time consuming and results in little cost recovery," Gibison said.

When this procedure expands to sharing equipment among other districts the potential exists for even greater savings.

"Communication is the key to making this happen," Gibison said. "It's about project managers talking to their counterparts and sharing information."

Munitions experts part of award-winning community relations team

By Debra Valine
Huntsville Center

While evaluating a residential community on what used to be Camp Wheeler near Macon, Ga., inspectors found a 60-millimeter mortar under leaf litter. Mortars also have been found within 13 feet of homes in that area.

These inspections are being conducted under the Formerly Used Defense Sites (FUDS), Military Munitions Response Program, managed by the Engineering and Support Center, Huntsville. To date, 1,691 former military sites have been identified, with 600-700 sites expected to be contaminated with unexploded ordnance. The former Camp Wheeler is one of them.

Partners in this project include Savannah District; Huntsville Center; EOD Technology, Inc.; and the residents of the former Camp Wheeler.

It was Savannah District's expertise in working with the community on this project that led to the district winning the Locke L. Mouton Community Relations Award, presented by Headquarters, Corps of Engineers.

"This has been a huge community relations success because we are telling the residents the truth," said Chris Cochrane, project management specialist with Huntsville Center's Ordnance and Explosives Design Center.

The team kept the community informed and involved in the project through public meetings, news releases and a Web site.

"The community remains supportive of the project," said Billy Birdwell, Savannah District chief of Public Affairs. "Local officials have gained insight into the efforts of the Corps and FUDS program."

Cochrane said the most successful meeting was in February where question and answer stations were set up around the cafeteria in a local school.

"The residents are so grateful that they make brownies for the field workers and leave them on the porch before they evacuate," she said.

When Corps employees and contractors are doing intrusive field work, residents must be evacuated for their safety.

"Because we are working in a neighborhood, we are working closely with the residents," Cochrane said. "We need to gain Rights of Entry before we can do this work. Most of the people are very cooperative."

Residents who do not work outside the home during the day are evacuated to hotel rooms, paid for by the project.

"Monday through Thursday we do intrusive field work and residents have to be gone," Cochrane said. "On Fridays, we run the magnetometer over the ground and any time we find a magnetic anomaly — it could be a bomb, pipe or even a tuna can — we mark it with a flag and spray paint. When we go in Monday through Thursday, we dig up the anomalies."

So far, about 40 60-millimeter mortars have been removed from people's yards. These are high explosive rounds, not training rounds.

The former Camp Wheeler encompasses more than 14,000 acres that were used to train replacement troops during World Wars I and II. Munitions being removed now only date to the Second World War.

Camp Wheeler was declared excess in 1946 and deactivated. Follow-on de-dudding — picking up duds off the surface — operations were conducted in 1947. "They did not have the technology at that time to get below the surface," Cochrane said.

The lessons learned from this effort include the need for early discussions with the public and frankness with the media and officials, Birdwell said.

Media walk through an area that is marked for further investigation during a media day at the former Camp Wheeler. *(Photo by Robin Hawn, EOD Technology)*

Guinsaugon landslide relief mission

Honolulu District geologist describes disaster relief experience

By Eric Bjorken
Honolulu District

The Corps deployed a Forward Engineer Support Team to the village of Guinsaugon, Leyte, Philippines, after a massive landslide swept away homes and killed an estimated 1,800 people.

Within 24 hours, the FEST deployed to assist U.S. Marines' search and rescue efforts and help assess the hazard of the surrounding hillside. Eric Bjorken, a geologist from Honolulu District's Environmental Technical Branch, provided a first-hand account.

It started with a call Feb. 18 from my supervisor alerting me that I may deploy to St. Bernard in South Leyte Island Province, Republic of the Philippines.

The next day, Tom Brady, military contingency planner, called to ask if I was willing to deploy.

My answer: an emphatic "yes!"

Our team consisted of Ray Kong, geotechnical engineer, Honolulu District Technical Support Branch; Doug Bliss, geotechnical engineer and chief of the Far East District's Geotechnical and Environmental Engineering Branch; Dr. Rick Olsen, geotechnical engineer at the Geotechnical Laboratory, Engineering and Research Development Center and me.

Traveling to the remote area was a logistical nightmare; the 35-hour trip took us to Manila, Cebu, Clark Airfield, Tacloban and finally to the USS Essex where we boarded a CH-46 helicopter bound for St. Bernard.

When we arrived, the relief worker tent city wasn't set up yet, and there were no hotels. We quickly realized we were "sleepless in St. Bernard" as we didn't have so much as a sleeping bag or bath towel.

Rick and Doug managed to find a spare room from our U.S. Marine hosts.

Ray and I shared a room in the home of Mr. and Mrs. Romeo Goda, local citizens, who took us in out of the goodness of their hearts. We slept on wooden plank beds on pandanas mats (thin cushions) and were grateful for this when it rained.

Members of the Corps landslide team and U.S. Marines listen to a Guinsaugon Landslide Relief Mission brief. *(Photo by Doug Bliss, Far East District)*

U.S. Marines march toward the Guinsaugon Landslide Relief Mission base camp and landslide area. *(Photo by Dr. Rick Olsen, Geotechnical Laboratory, Engineering and Research Development Center)*

The loose, swampy conditions made the mission extremely dangerous. At first, the priority was to find survivors.

As the grim futile reality of finding more survivors set in, priorities changed. The search and rescue operations mission shifted from a generalized search of the debris plain for survivors to a site-specific search of the Guinsaugon School where hopes of finding trapped victims diminished over the course of the week. The energy of the landslide was too great to be resisted by the manmade structures.

No survivors were found after the initial 24 hours of the search.

As the rescue operations transformed into recovery operations, work crews began excavating deeper into the sediment. This jeopardized the lives of the rescue workers. On two occasions our team recommended suspension of recovery operations as a result of inclement weather and unstable soil conditions.

On Feb. 25, the tents started coming down and rescue workers began demobilizing.

It was difficult to leave with so much work left undone. I couldn't help but be reminded of the fall of Saigon, as if everyone was bailing out. But our part of the work was done and we relinquished our mission to the Government of the Republic of the Philippines Mines and Geosciences Bureau.

It's so humbling to be at the site of a natural disaster. I think I can speak for the Corps landslide team — the memories of this mission and the people of Leyte won't be leaving us anytime soon.

Corps builds medical center in bustling Iraqi city

By Claude D. McKinney
Gulf Region North District

Growth. Industry. Commerce. Life. Capital investment. These are just some of the words to describe the feelings when driving through Sulaymaniyah, the capital city of Iraq's most northeastern province of the same name.

Sulaymaniyah Province shares borders with Iran for hundreds of miles. The streets are alive with shoppers, and the shops are full of goods. Rush hour offers grid lock as is common to any western city of a similar size.

Lost within the tremendous growth and construction activity of this thriving city is the start of a new Primary Health Center, a 1,385 square meter building. When completed, it will provide outpatient care to an estimated 40,000 residents of Sulaymaniyah.

Plans call for two patient treatment rooms, six medical examination rooms, two dental examination rooms, seven doctor's offices and much more.

When completed it is expected to employ 10 doctors, 20 nurses and other hospital staff and administrators.

Pump truck reaches across the work site to place concrete in the far corners of the health center's foundation. *(Photo by Claude D. McKinney)*

"One of the principles of construction is that a proper foundation will pave the way for stable walls," said David Crumpton, the Sulaymaniyah resident engineer for the Corps. "It is going to be built on a traditional mid-eastern concrete post and beam frame. So if the foundation is not right, the posts and beams could move and the walls would crack."

To avoid that, the foundation concrete is 0.75 meters thick and 1.6 meters wide. "The quality of the concrete is tested throughout the pour by taking samples of mix and performing certain tests. It's my job to ensure those tests are being done," said Eman Dawood, an Iraqi engineer working for the Gulf Region North District.

This foundation is good and will provide a stable base for the medical center. And in turn this medical center will be a stabilizer here.

Huntington District Dolly Sods team receives honors

Congratulations to the team who dreamed up the animated flash video that stars Wally the Woodchuck. Available on the Huntington District Web site at www.lrh.usace.army.mil/projects/current/derp-fuds/wvma/dolly_sods_information/, Wally warns visitors to the Dolly Sods area in West Virginia about the danger of old munitions left over from more than 60 years ago when the site was used for military maneuvers. For the second year, the Dolly Sods team was honored at the Telly Awards. The team won a Silver Telly in the safety category and Bronze Telly in the government category. The Telly Awards honor local, regional and cable television commercials and programs, as well as video and film productions.

In addition to the Telly Awards, the Dolly Sods team won an award from the Association for Women in Communications for their Community Relations Campaign and an award for their Area Map and Unexploded Ordnance Training Guide.

The team included (from left) Erich Guy, Rick Meadows, Greta Jackson, Col. William Bulen, Mary Newman, Nick McHenry, Wally Dean, Kathy Rea and Frank Albert. *(Photo by Chuck Minsker, Huntington District)*

Silvery Minnow

Continued from page 10

also complicated the recovery efforts, as these new fish feed on the minnows.

In 2003, the U.S. Fish and Wildlife Service issued a Biological Opinion (BO) that listed a host of alternatives to save the species. Since issuing the BO, two fish hatcheries have been built and one is under construction, upstream reservoirs have changed their annual operations, and habitat has been built to provide fish the slow-moving currents the minnows need to reproduce.

"The river is simply over allocated," Sanders said. "With so many competing needs for water there's not always enough water for everyone.

One idea they are evaluating is to provide a different approach to managing the basin's water, which is to provide additional upstream conservation of water earmarked for the fish recovery effort. Although no final determination has been made, Abiquiu Reservoir, north of Albuquerque, could be a possible source of additional water storage to supplement downstream flows for the small fish during times of drought, she said.

The Silvery Minnow protection effort is the latest on the list of labors to restore declining species populations along the river. Since development along the river began more than 100 years ago, several species have been lost.

The Silvery Minnow is a barometer of sorts of the environmental health of the ecosystem, Thompson said.

"This is about recovering the Silvery Minnow, but it's also about improving the ecosystem overall," he said.

The Green Guide unveils the top 10 green cities

1. Eugene, Ore., population 137,893

2. Austin, Texas, population 656,562

3. Portland, Ore., population 529,121

4. St. Paul, Minn., population 287,151

5. Santa Rosa, Calif., population 147,595

6. Oakland, Calif., population 399,484

7. Berkeley, Calif., population 102,743

8. Honolulu, population 371,657

9. Huntsville, Ala., population 158,216

10. Denver, population 554,636

DEPARTMENT OF THE ARMY
U.S. ENGINEERING AND SUPPORT CENTER, HUNTSVILLE
P.O. BOX 1600
HUNTSVILLE, AL 35807-4301

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